What is claimed is:

1. An information processing apparatus comprising:

user interface means for displaying an operation state of a program to a user in a time-series manner based on program execution history information, and for receiving a portion of a defect pointed out by the user in the displayed operation state; and

operation analysis means for analyzing a cause of the defect from the portion of the defect pointed out from the user by said user interface means and from the operation state of the program, and for specifying a solution for solving the cause of the defect, wherein

said operation analysis means regenerates operation state on which said solution is reflected; and

said user interface means displays said defect of the cause, said solution and the regenerated operation state to the user.

2. An information processing apparatus according to claim 1, wherein if said operation analysis means cannot specify a portion in which said solution is reflected on the operation state,

said information processing apparatus further urges the user to designate the portion in which the solution is reflected on the operation state;

said operation analysis means regenerates operation state on which the solution is reflected in the portion

designated by the user; and

said user interface means displays said cause of the defect, the solution and the regenerated operation state to the user.

5   3.   An information processing apparatus according to claim 1, wherein

said information processing apparatus has program function correspondence information for specifying said solution.

10   4.   An information processing apparatus according to claim 1, wherein

said user interface means uniquely identifies the designated portion by allowing the user to designate the portion of the defect by a coordinate position.

15   5.   An information processing apparatus according to claim 1, wherein

said information processing apparatus further automatically generates a program skeleton satisfying an original specification based on said solution and said 20   execution history information.

6.   A recording medium having a defect analysis program for allowing a computer to realize the following steps of:

displaying an operation state of a program to a user in a time-series manner based on program execution history 25   information;

analyzing a cause of a defect from a portion of the defect designated by the user and from the operation state

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of the program, and specifying a solution for solving the cause of the defect;

regenerating operation state on which said solution is reflected; and

5   displaying said cause of the defect, said solution and the regenerated operation state to the user.

7.   A recording medium according to claim 6, wherein the defect analysis program further allows the computer to realize the following functions of:

10   urging the user to designate a portion on which said solution is reflected if the portion in which the solution is reflected on said operation state cannot be specified;

regenerating operation state on which the solution is reflected in the designated portion; and

15   displaying said cause of the defect, said solution and the regenerated operation state to the user.

8.   A recording medium according to claim 6, wherein the defect analysis program allows the computer to realize a function of specifying said solution by using a program

20   function correspondence information table.

9.   A recording medium according to claim 6, wherein the defect analysis program further allows the computer to realize a function of automatically generating a program skeleton satisfying an original specification based on said

25   solution and said execution history information.

10.   A defect analysis method comprising the steps of:

displaying an operation state of a program to a user

in a time-series manner based on program execution history information;

analyzing a cause of a defect from a portion of the defect designated by the user and from the operation state of the program, and specifying a solution for solving the cause of the defect;

regenerating operation state on which said solution is reflected; and

displaying said cause of the defect, said solution and the regenerated operation state to the user.

11. A defect analysis method according to claim 10, further comprising the steps of:

urging the user to designate a portion on which said solution is reflected if the portion in which the solution is reflected on said operation state cannot be specified;

regenerating operation state on which the solution is reflected in the designated portion; and

displaying said cause of the defect, said solution and the regenerated operation state to the user.

12. A defect analysis method according to claim 10, wherein

said solution is specified by using a program function correspondence information table.

13. A defect analysis method according to claim 10, further comprising the step of:

automatically generating a program skeleton satisfying an original specification based on said solution and said

execution history information.

14. An application program development assistance system used for development of an application program executed on a hardware resource, said system comprising:

5   an environment definition section for defining system environment when the application program is executed in the execution environment included of a hardware resource and software, and defining operation rules for the execution environment;

10   a check section for checking a virtual execution state of said application program in said execution environment based on said environment definition; and

a display information generation section for generating display information for virtually displaying said
15 virtual execution state.

15. An application program development assistance system according to claim 14, said system comprising:

a display device for displaying said display information; and

20   an interface section formed on a display screen of said display device, the interface section operating an operation for changing said virtually displayed virtual execution state on the display screen.

16. An application program development assistance
25 system according to claim 15, wherein said interface section changes the virtual execution state by;

a function for issuing a system call from said execution

environment at an arbitrary program execution stage in said virtual execution state; and

a function for issuing a system call from said execution environment to an element of an arbitrary execution environment in said virtual execution state.

17. An application program development assistance system according to claim 15, wherein said interface section changes the virtual execution state by issuing a system call from said execution environment to an arbitrary object operated on said execution environment in said virtual execution state.

18. An application program development assistance system according to claim 15, wherein said interface section changes the virtual execution state by issuing an event caused by another program activated to be interrupted on said execution environment at an arbitrary program execution stage in said virtual execution state.

19. An application program development assistance system according to claim 15, wherein said interface section changes the virtual execution state by a function for issuing an event caused by another program activated to be interrupted on said execution environment at an arbitrary program execution stage in said virtual execution state; and a function for setting a time required for execution of the other program to an arbitrary length.

20. An application program development assistance system according to claim 14, said system comprising an

execution object generation section for outputting said application program in an executable form on said execution environment.